STATE OF CALIFORNIA
Department of Transportation Specification
Light and Dark Blue Finish Paint
(Waterborne Formula PWB-165B)

SCOPE

This specification covers a pre-mixed waterborne paint formulated for use as a finish coat on properly prepared metal surfaces.

This coating is intended for spray application. Limited application can be made by brushing and rolling.

REQUIREMENTS

General:

This specification is intended to specify paint that will meet service requirements for bridge construction and maintenance. All properties listed shall be maintained for a minimum of one year after acceptance. If the vendor is making this paint for the first time, the Transportation Laboratory in Sacramento must be consulted.

Materials:

The raw materials for use in the paint formula shall conform to the specifications designated or paint material code number hereinafter specified.

QUALITY ASSURANCE

The inspection, sampling, testing, packaging and marking of the coating shall comply with State of California Specification 8010-XXX-99, *Coatings, Protective, Quality Assurance Requirements.*

Unless otherwise permitted by the Maintenance Engineer, paint shall be sampled at the place of manufacture and application will not be permitted until the paint has been approved by the Maintenance Engineer. Raw materials and copies of batch records used in the manufacture of the paint shall be submitted as requested by the Maintenance Engineer.

All tests will be conducted in accordance with the latest test methods of the American Society for Testing and Materials, Federal Test Method Standard No. 141, and methods in use by the Transportation Laboratory.

Patents:
The contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work, and agrees to indemnify and save harmless the State of California, and its duly authorized representatives from all suits at law or action of every nature for, or on account of, the use of any patented materials, equipment, devices, or processes.

CORONADO BLUE FINISH PAINT

Waterborne Formula PWB-165B

Description

This specification covers a light or dark blue, waterborne paint formulated for use as a finish coat on properly prepared metal surfaces.
This coating is intended for spray application. Limited application can be made by brushing or rolling.

Composition

Paint shall be mixed in the following proportions and sequence:

Component		Weight percent
Water		5.9
Dispersant	(1)	0.64
Surfactant	(2)	0.21
Thickener	(3)	0.16 to 0.20
Defoamer	(4)	0.11

Hold back part of water initially to get good grind viscosity.
Do not exceed 37°C during this operation.
Add remainder of water after grind is achieved.

Titanium Dioxide	(5)	4.2 to 4.3
Calcium Carbonate	(6)	7.5 to 10.5
Predispersed Colorant		1.0 to 5.0

Colorants selected shall be compatible, light-fast, glycol-free, and alkali resistant. They shall be carefully selected so as to not adversely affect the coating formulation. Colorants shall not contain lead, chromium or zinc.

Let down paste slowly:

Styrenated Acrylic Emulsion	(7)	60 to 61
Coalescing Solvent	(8)	7.0
Ammonium Hydroxide (28%) (add as necessary to adjust pH)		≅ 0.2
Water (add as necessary to adjust nonvolatile content and viscosity)		9 to 9.5

Characteristics

Density, grams per milliliter, ASTM D-1475	1.11 to 1.15
Pigment by weight of paint, percent, ASTM D-3723	12.5 to 15.5
Nonvolatile content, weight percent, ASTM D-2369, Procedure B	42.0 to 45.5
Nonvolatile content, volume percent, ASTM D-2697	35.0 to 37.0
Fineness of grind, Hegman, ASTM D-1210	6 minimum
Contrast ratio, ASTM D-2805, 150 µm clearance applicator	0.98 minimum
pH	8.0 to 9.0
Consistency, ASTM D-562, grams (Equivalent KU)	175 to 225 (77 to 86)
High-shear viscosity, ASTM D-4287, 0 to 5-P cone, shear rate 12 000 s^{-1}	0.5 P maximum
Drying time, 100 µm wet film, ASTM D-1640	
set to touch, hours	1 maximum
dry through, hours	2 maximum

Light blue color to match Caltrans color chip number PWB-110. Dark blue color to match Caltrans color chip number PWB-111. Color chips are available from the Transportation Laboratory in Sacramento.

(1) Tamol® 681 (Rohm and Haas Company)

(2) Surfÿnol® 104A (Rohm and Haas Company)

(3) Acrysol® RM-825 (Rohm and Haas Company)

(4) Bubble Breaker 3056A (Witco)

(5) ASTM D-476, Type IV

(6) 98% minimum $CaCO_3$ having an average particle size of 5 µm or less, a maximum particle size of 25 µm and containing no less than 80% particle size of less than 10 µm. Oil absorption (ASTM D-281) shall be less than 22.

(7) Aquamac 700 (McWhorter, Inc.) or EPS 2504 (Engineered Polymer Solutions, Inc.)

(8) 2,2,4-Trimethylpentanediol-1,3-monoisobutyrate